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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/576,179	05/23/2000	Udo Gorl	PM268103/990049PK	3953

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EXAMINER

LEE, RIP A

ART UNIT	PAPER NUMBER
1713	10

DATE MAILED: 03/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/576,179	GORL ET AL.
Examiner	Art Unit	
Rip A. Lee	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on ____.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-5 and 16-18 is/are pending in the application.

4a) Of the above claim(s) ____ is/are withdrawn from consideration.

5) Claim(s) ____ is/are allowed.

6) Claim(s) 1-5 and 16-18 is/are rejected.

7) Claim(s) ____ is/are objected to.

8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on ____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. ____.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). ____.

2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) Other: ____

DETAILED ACTION

This office action follows an amendment filed on February 28, 2002. Original claims 1 and 5 were amended, and new claims 16-18 were added. Notably, an amendment to claim 1 changes the format of the Markush group contained therein. As such, it is now understood that the new scope of the invention is that of a composition containing two types of filler.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claims 1, 2, 5, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,788,231 to Smigerski *et al.* in view of Görl *et al.* in *KGK* Journal.

Smigerski *et al.* disclose a pourable powdered rubber containing filler. Fillers which can be used in the invention include the carbon blacks and inorganic substances such as silica (col. 3, lines 26-32). The amount of filler used ranges from 20-1000 phr (col. 3, line 34), and combinations of carbon black and light-colored fillers are possible. From this recitation, it would have been obvious to one having ordinary skill in the art to use common fillers carbon black and silica in amounts that do not exceed 1000 phr. As such, it would have been obvious to one having ordinary skill in the art to arrive at the claims of the present invention because, according to Smigerski *et al.*, such an embodiment is feasible. Smigerski *et al.* does not teach the use of coupling agents.

The topic of the journal article by Görl *et al.* concerns rubber powders. Fillers such as carbon black and silica are used in an amount of 40-1000 phr (pages 251-252). Figures 4, 5 and 7 depict the production stages in the manufacture of rubber compounds in which both fillers are incorporated into the rubber composition. Hence, it would have been obvious to one having ordinary skill in the art to use carbon black and silica in amounts that do not exceed 1000 phr.

Furthermore, Görl *et al.* teaches the importance of the use of a bifunctional coupling agent such as *bis*(3-triethoxysilylpropyl)tetrasulfane for overcoming the large differences in polarity between silica and rubber (page 252 and Figure 2). Incorporation of coupling agents results in better dispersion of silica into the rubber, which in turn, improves processing (see page

252). Therefore, it would have been obvious to one having ordinary skill in the art to use coupling agents in those rubber compositions which also contain silica.

With respect to claims 2, 5 and 18, Smigerski *et al.* discloses the use of rubbers such as styrene-butadiene copolymer and ethylene-propylene-diene rubber (col. 2, lines 66-68). The particle size distribution of the product is less than 10 mm, preferably ranging from 0.050-5 mm (col. 5, lines 10-12). Thus, it would have been obvious to one having ordinary skill in the art to use these materials because they are adequately disclosed in the prior art. In addition, it would have been obvious to one having ordinary skill in the art to expect rubber particles within the claimed range when using the process of the prior art.

2. Claims 1-3, 5, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smigerski *et al.* in view of U.S. Patent No. 5,159,009 to Wolff *et al.*

The discussion of the disclosures of the prior art of Smigerski *et al.* from paragraph of this office action is incorporated here by reference, and in view of said discussion, it would have been obvious to one having ordinary skill in the art to use common fillers carbon black and silica in amounts that do not exceed 1000 phr. As such, it would have been obvious to one having ordinary skill in the art to arrive at the claims of the present invention because, according to the prior art, such an embodiment is feasible. Smigerski *et al.* does not teach the use of coupling agents and processing aids.

Wolff *et al.* teaches the use of coupling agents of general formula (I), $[R_n^{1-}(RO)_{3-n}Si-(Alk)_m-(Ar)_p]_2[S]_x$, for modifying the surface of carbon black in rubber compositions. As is well

known in the art, coupling agents facilitate homogeneous dispersion of filler into the resin matrix, which in turn, results in product with improved modulus and tensile strength (col. 6, lines 53-56). Thus, with respect to claim 1, it would have been obvious to one having ordinary skill in the art to use the coupling agent of Wolff *et al.* in the composition of Smigerski *et al.* in order to achieve optimal properties.

Regarding the remaining claims, Smigerski *et al.* discloses the use of SB rubber for preparing rubber powders with a particle size distribution ranging from 0.050-5 mm. Wolff *et al.* also teach the use of coupling agents with general formulae $R_n^1(RO)_{3-n}Si-(alkyl)$ and $R_n^1(RO)_{3-n}Si-(alkenyl)$, as well as vulcanization promoters such as ZnO, anti-aging agents, and auxiliary processing aids (col. 3, lines 61-68 and col. 4, line 11). It would have been obvious to one having ordinary skill in the art to use the same materials since they are adequately disclosed in the prior art.

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smigerski *et al.* in view of Wolff *et al.* as applied to claims 1-3, 5, and 16-18 above, and further in view of U.S. Patent No. 5,216,055 to Goerl *et al.*

The discussion of the disclosures of the prior art from paragraph 2 of this office action is incorporated here by reference. Neither reference teaches the use of flame retardant materials in the compositions. The desire to impart flame retardant properties to a material is apparent. The Goerl *et al.* disclose the use of magnesium and aluminum hydroxides as reagents of choice for imparting flame retardant properties to synthetic and natural rubbers (col. 1 – col. 2 and claims). Therefore, it would have been obvious to one having ordinary skill in the art to incorporate

magnesium hydroxide or aluminum hydroxide into the rubber material of Wolff *et al.* in order to render it flame retardant.

Response to Arguments

4. Due to the amendment of independent claim 1, the rejections of the previous office action of November 2, 2001 no longer apply. Since the claims have been amended to correct for matters of form, the objections made in the previous office action no longer apply.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (703)306-0094. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (703)308-2450. The fax phone number for the organization where this application or proceeding is assigned is (703)746-7064. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

ral

March 20, 2002


DAVID W. WU
SUPERVISORY PATENT EXAMINER
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